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EXAMINER

KRASNIC, BERNARD

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/700,772	<b>Applicant(s)</b> BERNS ET AL.	
	<b>Examiner</b> BERNARD KRASNIC	<b>Art Unit</b> 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-9, 11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-9 and 11-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Arguments***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/05/2009 has been entered.

2. The Applicant has canceled claim(s) 5 and 10.

3. The application has pending claim(s) 1-4, 6-9 and 11-12.

4. Applicant's arguments with respect to claim(s) 1-4, 6-9 and 11-12 have been considered but are moot in view of the new ground(s) of rejection because of the Request for Continued Examination (RCE).

5. Applicant's arguments filed 5/05/2009 have been fully considered but they are not persuasive.

The Applicant alleges, "Applicants have amended each of ..." in page 7 through "Accordingly, independent claims ..." in page 8, and states respectively that the prior art reference Yamamoto does not disclose or suggest an ink amount index indicating an ink usage amount. Although the Examiner agrees, the new reference Yamazaki et al (US

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2003/0218656 A1) does disclose such a feature. More specifically, Yamazaki discloses an image quality index / image quality including an ink amount index indicating an ink usage amount / ink ejection amount (see Yamazaki, abstract at lines 1-3 and 11-13, Figs. 20 and 24, [0009]). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify Arai's color correcting method and apparatus, as modified by Takahashi and Yamamoto, using Yamazaki's teachings by including to the image quality index an ink ejection amount indicator in order to improve print image quality (see Yamazaki, abstract at lines 1-3 and 11-13, Figs. 20 and 24, [0009]). Further, the applied reference [Yamazaki et al] has a common assignee [SEIKO EPSON CORPORATION] with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is

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disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a).

See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Therefore, claims 1-4, 6-9 and 11-12 are still not in condition for allowance because they are still not patentably distinguishable over the prior art references.

### ***Claim Rejections - 35 USC § 101***

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claim(s) 6-9 and 11 [claims 7-9 are dependent upon claim 6] is/are rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. The Federal Circuit<sup>1</sup>, relying upon Supreme Court precedent<sup>2</sup>, has indicated that a statutory “process” under 35 U.S.C. 101 must (1) be tied to a particular machine or apparatus, or (2) transform a particular article to a different state or thing. This is referred to as the “machine or transformation test”, whereby the recitation of a particular machine or transformation of an article must impose meaningful limits on the claim's scope to impart patent-eligibility (See *Benson*, 409 U.S. at 71-72), and the involvement of the machine or transformation in the claimed process must not merely be insignificant extra-solution activity (See *Flook*, 437 U.S. at 590”). While the instant claim(s) recite a series of steps or acts to be performed, the claim(s) neither transform an article nor

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<sup>1</sup> *In re Bilski*, 88 USPQ2d 1385 (Fed. Cir. 2008).

<sup>2</sup> *Diamond v. Diehr*, 450 U.S. 175, 184 (1981); *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972); *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876).

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positively tie to a particular machine that accomplishes the claimed method steps, and therefore do not qualify as a statutory process. That is, for example the significant method steps [e.g. claim 6] of converting given colorimetric data are not tied to another statutory category such as a particular apparatus (i.e. a computer processor for processing the specific method steps). Also for example [e.g. claim 11] the significant method steps (d)-(f) are not tied to another statutory category such as a particular apparatus (i.e. a computer processor for processing the specific method steps). Any amendment to the claim(s) should be commensurate with its corresponding disclosure.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-4, 6-9 and 11-12 are rejected under 35 U.S.C. 103(a) as being obvious over Arai et al (US 5,929,906, as applied in previous Office Action) in view of Takahashi et al (US 6,987,567, as applied in previous Office Action) and Yamamoto (US 2002/0158933 A1, as applied in previous Office Action), and further in view of Yamazaki et al (US 2003/0218656 A1).

The applied reference [Yamazaki et al] has a common assignee [SEIKO EPSON CORPORATION] with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Arai, as recited in claim 1, discloses an apparatus (20, 50) for performing color conversion / color correcting with reference to a profile / parameters or connection weights (24, 55) defining correspondence between colorimetric value data and ink amount data (see Figs. 1 and 10, title, col. 6, lines 36-40, col. 5, lines 47-54, col. 13, lines 10-19, col. 3, lines 45-58, col. 13, lines 31-40, col. 11, lines 44-48), comprising a profile memory (24, 55) (see Figs. 1 and 10) for storing a plurality of profiles, a color converter / conversion portion (53, 54) for selecting one of the plurality of profiles and

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for converting given colorimetric data into ink amount data with reference to the selected profile (see Fig. 10, col. 11, lines 32-43, col. 13, lines 10-19, col. 3, lines 45-58, col. 13, lines 31-40, col. 11, lines 44-48).

Arai, as recited in claim 3, discloses the color converter / conversion portion (53, 54) receives selection of one of the printing conditions / usable illuminants (see Fig. 10, col. 6, lines 36-40, the profile memory gives the color converter printing conditions such as usable illuminants, col. 11, lines 44-50, the usable illuminants being the daylight illuminant and the designated illuminant, col. 13, lines 31-40).

Arai, as recited in claim 4, the plurality of profiles / usable illuminants are associated with plural types of images / daylight and designated illuminant images to be reproduced by the ink amount data, and the color converter / conversion portion (53, 54) receives selection / from profile memory (55) of one of the plural types of images, and selects the profile associated with the selected image type (see Fig. 10, col. 11, lines 44-50, col. 13, lines 32-40).

Arai, as recited in claim 12, discloses an apparatus (20, 50) for producing a profile / parameters or connection weights (24, 55) defining correspondence between colorimetric value data and ink amount data representing a set of ink amounts of plural inks usable by a printer (see Figs. 1 and 10, title, col. 6, lines 36-40, col. 5, lines 47-54, col. 13, lines 10-19, col. 3, lines 45-58, col. 13, lines 31-40, col. 11, lines 44-48), comprising a spectral printing model converter / conversion portion (53, 54) (see Fig. 10, col. 3, lines 9-28), and a profile generator / profile memory (24, 55) producing a profile defining correspondence between colorimetric value data and ink amount data



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based on the selected plural sample ink amount data (see Figs. 1 and 10, title, col. 6, lines 36-40 and 45-59, col. 5, lines 47-54, col. 13, lines 10-19, col. 3, lines 45-58, col. 13, lines 31-40, col. 11, lines 44-48, col. 8, lines 1-9, equations 6 and 7).

However, Arai fails to specifically disclose, as recited in claim 1, that each profile being produced using plural sample ink amount data selected based on an evaluation index including a color difference index and an image quality index; the image quality index including both of a graininess index (GI) indicating graininess of a print and an ink amount index indicating an ink usage amount. Arai also fails to specifically disclose, as recited in claim 2, that the color difference index and the image quality index includes plural types of indices, and the color converter receives user selection of the color difference index and the image quality index. Arai also fails to specifically disclose, as recited in claim 3, that the color difference index and the image quality index are associated with plural types of printing conditions. Arai also fails to specifically disclose, as recited in claim 12, a spectral printing model converter for a color patch, a selector for selecting one of a plurality of color difference and image quality indices, a calculator for calculating a color difference and an evaluation index, and a selector based on the evaluation index; the image quality index including both of a graininess index (GI) indicating graininess of a print and an ink amount index indicating an ink usage amount.

Takahashi, as recited in claim 1, discloses that each profile being produced using plural sample ink amount data selected based on an evaluation index / evaluation calculator (11) including a color difference index / difference calculator (8) and an image quality index / target color spectral data (5), the color difference index representing a

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color difference between a sample color / target color spectral data which is calculated from spectral reflectance of a virtual sample patch / target color to be printed with ink amounts represented by the sample ink amount data and a comparative color / compare color or evaluation color which is selected as a basis for comparison / color matching (6), the image quality index / target color spectral data representing image quality of the virtual sample patch / target color, the evaluation index for the plurality of profiles being defined to have different functional forms (see Fig. 1, Abstract, col. 5, lines 57-58), and the color difference index / color difference (1206) not being calculated from differences in the spectral reflectance of the sample color and the comparative color but rather being calculated from differences in colorimetric values of the sample color / target color (1204) and comparative color / evaluation color (1205) (see col. 7, lines 1-5, Fig. 12), the colorimetric values being either CIE-L\*a\*b\* values / L\*a\*b\* or CIE-XYZ values (see col. 7, lines 1-5, Fig. 12, equation 1).

Takahashi, as recited in claim 2, discloses the color difference index / color difference (1206) includes plural types of available color difference indices (see Fig. 12, col. 7, lines 1-5, equation 1), and the image quality index / target color spectral data includes plural types of available image quality indices (see Abstract, respective frequencies in the spectrum), and the color converter (taught by Arai in claim 1 above) receives user selection of the color difference index and the image quality index (see col. 6, lines 22-25 and 36-39, the color difference index is received through user selection because both the target and evaluation spectral data are received by the users instructions and the difference is made from these two L\*a\*b\* equivalent elements

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making the difference index essentially user selected), and selects the profile produced using the evaluation index including the selected color difference index and the selected image quality index (the profile essentially is the evaluation index or value produced by the user selected color difference index).

Takahashi, as recited in claim 3, discloses the color difference index / color difference calculator (1206) and the image quality index / target color spectral data has plural available types that are associated with a plurality of printing conditions / usable illuminants (9, S501) (see Figs. 1 and 5, Abstract, col. 6, lines 22-35, the plural available printing conditions are the usable illuminants produced by the light source, col. 8, lines 1-16), and the color converter receives selection of one of the printing conditions (the converter receives the profile being the evaluation index under the usable illuminants), and selects the profile (the profile essentially is the evaluation index or value) produced using the evaluation index / evaluation calculator (11) including proper types of the color difference index / color difference (8, 1206) and the image quality index / target color spectral data associated with the selected printing condition / usable illuminants (see Figs. 1 and 12).

Takahashi, as recited in claim 12, discloses a spectral printing model converter / spectral error evaluation apparatus (1, 2) for converting ink amount data to spectral reflectance of a color patch / evaluation color to be printed according to the ink amount data, the spectral printing model converter converting each of a plurality of sample ink amount data into spectral reflectance of a virtual sample patch / target color to be printed with the ink amounts represented by the sample ink amount data; a selector /

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evaluation value calculator for selecting one of a plurality (see Fig. 1, Abstract, respective frequencies in the spectrum) of color difference indices / difference calculator (8) and one or more of a plurality (see Fig. 1, Abstract, respective frequencies in the spectrum) of image quality indices / target color spectral data (5), each color difference index representing a color difference between a sample color / target color which is calculated from the spectral reflectance and a comparative color / compare color or evaluation color which is selected as a basis for comparison / color matching (6), each image quality index / target color spectral data representing image quality of the virtual sample patch / target color to be printed according to the sample ink amount data, each color difference index / color difference (1206) not being calculated from differences in the spectral reflectance of the sample color and the comparative color but rather being calculated from differences in colorimetric values of the sample color / target color (1204) and the comparative color / evaluation color (1205) (see col. 7, lines 1-5, Fig. 12), the colorimetric values being either CIE-L\*a\*b\* values / L\*a\*b\* or CIE-XYZ values (see col. 7, lines 1-5, Fig. 12, equation 1); a calculator / difference calculator (8, 1206) for calculating values of the selected color difference index and the selected image quality index for the plurality of sample ink amount data; a calculator / evaluation value calculator (11, 1207) for calculating an evaluation index using the values of the selected color difference index and the selected image quality index for the plurality of sample ink amount data; a selector / (Arai's conversion portion selects from Arai's profile memory a profile which is essentially Takahashi's evaluation value) for selecting plural sample ink amount data based on the evaluation index (see Fig. 1, Abstract, col. 5, lines 57-58).

Therefore, in view of Takahashi, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Arai's color correcting method and apparatus by including the capabilities of having the evaluation index as part of the profile, allowing the user selection of the color difference, having a spectral printing model converter with the two calculators in Arai's conversion portions, in order to further enhance the efficiency of the entire conversion by improving the precision and accuracy through evaluation means (see Takahashi, abstract, lines 14-18).

However, Arai as modified by Takahashi still fails to explicitly suggest, as recited in claim 1, that the image quality index including both of a graininess index (GI) indicating graininess of a print and an ink amount index indicating an ink usage amount. Arai as modified by Takahashi also fails to specifically disclose, as recited in claim 12, that the image quality index including both of a graininess index (GI) indicating graininess of a print and an ink amount index indicating an ink usage amount.

Yamamoto, as recited in claim 1, discloses the image quality index / image quality including a graininess index (GI) / graininess indicating graininess / graininess of a print / inked image (see Yamamoto, abstract, Fig. 8, [0005] at lines 1-2, [0018]).

Yamamoto, as recited in claim 12, discloses the image quality index / image quality including a graininess index (GI) / graininess indicating graininess / graininess of a print / inked image (see Yamamoto, abstract, Fig. 8, [0005] at lines 1-2, [0018]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify Arai's color correcting method and apparatus, as modified by Takahashi, using Yamamoto's teachings by including to the

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image quality index a graininess indicator in order to maintain balance between image graininess and the dependence of color appearance on the light source (see Yamamoto, [0018]).

However, Arai as modified by Takahashi and Yamamoto still fails to explicitly suggest, as recited in claim 1, that the image quality index including an ink amount index indicating an ink usage amount. Arai as modified by Takahashi and Yamamoto also fails to specifically disclose, as recited in claim 12, that the image quality index including an ink amount index indicating an ink usage amount.

Yamazaki, as recited in claim 1, discloses an image quality index / image quality including an ink amount index indicating an ink usage amount / ink ejection amount (see Yamazaki, abstract at lines 1-3 and 11-13, Figs. 20 and 24, [0009]).

Yamazaki, as recited in claim 12, discloses an image quality index / image quality including an ink amount index indicating an ink usage amount / ink ejection amount (see Yamazaki, abstract at lines 1-3 and 11-13, Figs. 20 and 24, [0009]).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to further modify Arai's color correcting method and apparatus, as modified by Takahashi and Yamamoto, using Yamazaki's teachings by including to the image quality index an ink ejection amount indicator in order to improve print image quality (see Yamazaki, abstract at lines 1-3 and 11-13, Figs. 20 and 24, [0009]).

As to claims 6-9, the claims are the corresponding method claims to claims 1-4 respectively. The discussions are addressed with regard to claims 1-4.

As to claim 11, the claim is the corresponding method claim to claim 12 respectively. The discussions are addressed with regard to claim 12.

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Krasnic whose telephone number is (571) 270-1357. The examiner can normally be reached on Mon-Thur 8:00am-4:00pm and every other Friday 8:00am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (571) 272-7453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bhavesh M Mehta/  
Supervisory Patent Examiner, Art Unit 2624  
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May 22, 2009